

**What is claimed is:**

## 1. An LED array comprising:

a plurality of LEDs, each with a first and second terminal, wherein the plurality of LEDs are arranged in a plurality of columns of LEDs having their first terminals electrically connected and a plurality of rows of LEDs having their second terminals electrically connected;

a plurality of column select switches, each column select switch being coupled to a column of the LEDs;

a plurality of column decoding switches, each column decoding switch attached to a plurality of column select switches for selectively coupling a column reference voltage through the column select switches to the columns of LEDs when both the column decoding switches and column select switches are activated;

the column decoding switches activated sequentially and for each activated column decoding switch the corresponding plurality of column select switches activated sequentially to provide the column reference voltage sequentially to the columns of LEDs; and

the LEDs in the array lit by providing a row reference voltage to the rows having LEDs to be lit when a column is coupled to the column reference voltage.

## 2. The LED array of claim 1 further comprising:

a plurality of column control input terminals for receiving column control input signals, a column control input terminal being coupled to two of the column

select switches for selectively activating the column select switches when an active column control input signal is provided; and

a configcol input terminal for receiving configcol input signals coupled to first and second column decoding switches of the plurality of column decoding switches, the configcol input signals having a first or second state causing the first column decoding switch to be activated when the configcol input signal is in the first state and the second column decoding switch to be activated when the configcol input signal is in the second state.

10 3. The LED array of claim 2 wherein:

each of the column select switches comprises a transistor;  
the first column decoding switch comprises a pnp transistor; and  
the second column decoding switch comprises an npn transistor.

15 4. The LED array of claim 1 further comprising:

a plurality of row select switches, each row select switch being coupled to a row of LEDs;

a plurality of row decoding switches, each row decoding switch attached to a plurality of row select switches for selectively coupling the row reference voltage through the row select switches to the rows of LEDs when both the row decoding switches and row select switches are activated; and

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the row decoding switches activated sequentially and for each activated row decoding switch the corresponding plurality of row select switches activated

sequentially to provide the row reference voltage sequentially to the rows having LEDs to be lit.

5. The LED array of claim 4 further comprising:

5 a plurality of row control input terminals for receiving row control input signals, a row control input terminal being coupled to two row select switches for selectively activating the row select switches when an active row control input signal is provided; and

a configrow input terminal for receiving configrow input signals coupled to  
10 first and second row decoding switches of the plurality of column decoding switches, the configrow input signals having a first or second state causing the first row decoding switch to be activated when the configrow input signal is in the first state and the second row decoding switch to be activated when the configrow input signal is in the second state.

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6. The LED array of claim 1 further comprising:

a plurality of column control input terminals arranged in unique pairs, one of the column control input terminals in a unique pair coupled to a column select switch and the other column control input terminal coupled to a column decoding  
20 switch; and

an active signal provided at a unique pair of the plurality of column control input terminals coupling one of the columns in the LED array to the column reference voltage by activating the column select switch and column decoding switch associated with the column.

7. A method of operating a plurality of LEDs arranged in a plurality of rows and columns, the method comprising:

providing a plurality of column select switches each of which is coupled to a column of LEDs;

5 providing a plurality of column decoding switches, each column decoding switch attached to a plurality of column select switches for selectively coupling a column reference voltage through the column select switches to the columns of LEDs when both the column decoding switches and column select switches are activated;

10 activating the column decoding switches sequentially;

activating the column select switches coupled to an activated column decoding switch sequentially, thereby providing the column reference voltage sequentially to all the columns of LEDs; and

providing a row reference voltage when a column is coupled to the column reference voltage, to the rows having LEDs to be lit thereby lighting the LEDs at  
15 the intersection of a row and column coupled to the row reference voltage and column reference voltage respectively.